ABSTRACT

CHARACTERIZATION GELATIN OF GUMMY BEAR SAMPLE USING FOURIER TRANSFORM INFRARED (FTIR) - KEMOMETRIK

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Food technology is growing very rapidly. Therefore, difficult to distinguish "halal" and "haram" products. Example of the food product is a product containing porcine gelatin and bovine gelatin. Based on that, we need an accurate method for the identification of bovine and porcine gelatin. This research aimed to identify the source of gelatin in gummy bear samples through FTIR analysis methods combined with kemometrik and determine characteristics of gelatin in gummy bear sample. First, Gummy bear gelatin isolated using cold acetone. Characterization in each sample is distinguished by IR spectrum profiles obtained in the range of wave numbers 4000-450 were presented existence amide group A, B, I, II, III, IV, V, and VI are specific to each source of gelatin. IR spectrum profile is mapped using PCA and Cluster Analysis in order to obtain results in a score plot, eigenvalue, loading plot, and dendogram. Based on the results of the analysis, FTIR-kemometrik method are able to distinguish the source of origin gelatin with significant difference level and able to determine characteristics of gelatin in gummy bear samples.

Keywords: Gelatin, acetone, FTIR, Principal component analysis, cluster analysis, jelly candies